

Serial No. 10/707,732
Amendment A
Page 2 of 2

AMENDMENTS

Claims:

Claim 1 (currently amended): An above-knee prosthesis having a knee joint demonstrating variable resistance comprising a thigh frame assembly that receives a thigh stump, a leg frame assembly with foot attached, a hinge interconnecting said thigh frame and leg frame assemblies to form an artificial knee joint, a closed hydraulic system further interconnecting said thigh frame and leg frame assemblies above and below said hinge to provide resistance to the flexion or extension of said artificial knee joint, a means to vary the resistance provided by said closed hydraulic system , and a means to translate the anterior-posterior ("AP") movement of said thigh stump into the degree of resistance provided by said closed hydraulic system that functions independent of knee angle.

Claim 2 (original): The above-knee prosthesis of claim 1, wherein the means to vary the resistance provided by said closed hydraulic system comprises a flow rate control valve.

Claim 3 (currently amended): The above-knee prosthesis of claim 2, wherein the means of translating the AP movement of said thigh stump to the degree of resistance provided by said closed hydraulic comprises a mechanical linkage mechanism that communicates the AP movement of said thigh stump to said flow rate control valve.

Godbey Griffiths Reiss
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Serial No. 10/707,732
Amendment A
Page 3 of 3

Claim 4 (original): The above-knee prosthesis of claim 2, wherein the means of translating the AP movement of said thigh stump to the degree of resistance provided by said closed hydraulic comprises a sliding mechanism that communicates the AP movement of said thigh stump to said flow rate control valve.

Claim 5 (currently amended): The above-knee prosthesis of claim 2, wherein the means of translating the AP movement of said thigh stump to the degree of resistance provided by said closed hydraulic comprises an electronic sensor and microprocessor wherein said sensor communicates movement of said thigh stump by electronic impulse to said microprocessor and said microprocessor further communicates said thigh movement by electronic impulse to said flow rate control valve.

Claim 6 (currently amended): The above-knee prosthesis of claim 54, further comprising additional sensors attached to the knee and ankle that provide information to said microprocessor that is combined with the information provided by the thigh stump sensor to more intelligently control said flow rate control valve.

Claim 7 (original): The above-knee prosthesis of claim 1 wherein said closed hydraulic system is housed substantially within said thigh and leg frame assemblies.

Claim 8 (original): The above-knee prosthesis of claim 1 wherein said closed hydraulic system is housed substantially outside said thigh and leg frame assemblies.

Godbey Griffiths Reiss
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Serial No. 10/707,732
Amendment A
Page 4 of 4

Claim 9 (original): The above-knee prosthesis of claim 2 wherein said flow rate control valve is housed within said thigh frame assembly.

Claim 10 (currently amended): The above-knee prosthesis of claim 2 wherein said flow rate control valve is housed within said leg frame assembly and said mechanical linkage mechanism if configured to communicate the AP movement of the thigh stump to said flow rate control valve independent of knee angle.

Claim 11 (new): A method of improved mobility for above-knee prostheses comprising the steps of:

providing a thigh frame assembly that receives a thigh stump;
providing a leg frame assembly with foot attached;
interconnecting said thigh frame and leg frame assemblies with a hinge to form an artificial knee joint;
providing a closed hydraulic system that further interconnects said thigh frame and leg frame assemblies above and below said hinge to provide resistance to the flexion or extension of said artificial knee joint;
providing a means to vary the resistance provided by said closed hydraulic system together with a means to translate the anterior-posterior ("AP") movement of said thigh stump into the degree of resistance provided by said closed hydraulic system that functions independent of knee angle, such that moving the thigh stump in an anterior direction decreases the resistance of rotation within said artificial knee joint and moving the thigh stump in a posterior direction increases the resistance of rotation within said artificial knee joint, or vice versa.

Godbey Griffiths Reiss
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Serial No. 10/707,732
Amendment A
Page 5 of 5

Claim 12 (new): The method of claim 11, wherein the means to vary the resistance provided by said closed hydraulic system comprises a flow rate control valve.

Claim 13 (new): The method of claim 11, wherein the means of translating the AP movement of said thigh stump into the degree of resistance provided by said closed hydraulic system comprises a mechanical linkage mechanism that communicates the AP movement of said thigh stump to said flow rate control valve.

Claim 14 (new): The method of claim 11, wherein the means of translating the AP movement of said thigh stump into the degree of resistance provided by said closed hydraulic system comprises a sliding mechanism that communicates the AP movement of said thigh stump to said flow rate control valve.

Claim 15 (new): The method of claim 11, wherein the means of translating the AP movement of said thigh stump into the degree of resistance provided by said closed hydraulic system comprises an electronic sensor and microprocessor wherein said sensor communicates movement of said thigh stump by electronic impulse to said microprocessor and said microprocessor further communicates said thigh movement by electronic impulse to said flow rate control valve.

Claim 16 (new): The method of claim 15, further comprising additional sensors attached to the knee and ankle that provide information to said microprocessor that is combined with the information provided by the thigh stump sensor to more intelligently control said flow rate control valve.

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